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APPLICANT: John CANNING et al.)
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TITLE: LASER ABLATION OF WAVEGUIDE STRUCTURES

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REPLACEMENT SPECIFICATION PARAGRAPH

Please replace the last paragraph on page 5 starting at line 33 with the following amended paragraph:

In initial experiments, the longer arm of a MZ device (~~12-m-SiO₂ cladding and buffer layers, 4x5-m-GeO₂-doped core $\Delta n = 0.01$~~) (12 m SiO₂ cladding and buffer layers, 4x5 m GeO₂ - doped core, $\Delta n \sim 0.01$) was processed for testing and confirmation of the concept. Measurements were taken at intervals after briefly halting the exposure at fixed times since the fibre coupling was increasingly affected by longer exposures. It was noted that both TE and TM shifted to longer wavelengths indicating an increase in refractive index. The TE effective index eventually increased more rapidly such that the splitting was reduced as shown in Fig. 4 which shows the change in wavelength splitting between TE and TM eigenstate with exposure to unfocussed light. Initially, however, as shown in Fig. 3, an increase in the splitting is observed, which is believed to be related to an initial increase in compressive stress and subsequent compaction of the core glass. The magnitude of reduction is sufficient to allow compensation of birefringence in most planar silica-on-silicon devices where the splitting is much lower than the device chosen here. Further, this value is unsaturated.